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ABSTRACT

In the late 1980s, in response to a number of problems including consistently low academic performance by students and graduates lacking the skills needed by employers, Swansea High School in Swansea, South Carolina, launched a major reform effort designed to transform Swansea into a high-performance high school. During the multi-year reform process, school leaders eliminated the general track by requiring all students to complete a college-preparatory or a vocational-technical program of study. All students were required to identify a major in one of four broad career clusters. The school's guidance, advisement, and tutorial services were strengthened. Swansea's vocational curriculum and equipment were updated, and district and school leaders worked to develop curriculum guides that reflected national standards. In an effort to improve the quality of instruction, school and district leaders implemented a variety of staff development activities and expanded the use of instructional technology in mathematics and science classes. A shared vision was created among academic and vocational teachers, community partnerships were built, and applied instructional were strategies used to motivate students to learn challenging content. Swansea's reform efforts resulted in overall improvements in students' academic performance, as documented by the High Schools That Work assessments of reading, mathematics, and science performance in 1993 and 1996. (MN)

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Case Study

SWANSEA HIGH SCHOOL
Swansea, S.C.

Swansea High School is located in an area of South Carolina that was formerly agricultural but is rapidly becoming more densely populated. Inexpensive housing and the proximity of the area to Columbia—the state capital (only 21 miles away)—are factors that are transforming Swansea into a "bedroom community."

While the high school once served a small population of students from farm families, it now enrolls 759 students, including 20 percent minority students. About 60 percent of students in the school district qualify for free or reduced-price lunches. Most parents are not college graduates. Swansea's enrollment has increased, but the revenue base has not kept pace.

The Need for Change

In the late 1980s, newly-elected school board members expressed concern about Swansea High School's consistently low academic performance, discipline problems, shabby vocational labs, large number of low-level courses, and graduates who lacked the skills needed by employers. There was no real focus on learning, either in high school or beyond. As a result, Swansea had one of the highest dropout rates in the state.

Board members were so dissatisfied that they undertook a major effort to "turn the school around." One of the first things they did was to find a superintendent who would "take charge."

Swansea's Improvement Plan

After employing school and district leaders committed to improving student performance, the school board instructed them to make Swansea a high-performance high school. Over the next seven years, Swansea's leaders took action to:

- **Raise Graduation Requirements**

Swansea's graduation requirements have been aligned with the *High Schools That Work*-recommended curriculum. To graduate, students must complete at least the following:

- Four college-preparatory-level English courses;
- Three mathematics courses, including two college-preparatory-level courses;
- Three science courses, including two college-preparatory-level courses;
- An academic or a vocational-technical concentration. Students completing a vocational-technical concentration are encouraged to take a mathematics course and a science course during senior year.

School leaders eliminated the general track by requiring all students to complete either a college-preparatory or a vocational-technical program of study. To convince teachers that these steps were necessary, Swansea's leaders involved business representatives such as the tool-and-die employer who said his company "needs employees who have studied algebra and geometry." This helped mathematics teachers realize they needed to find ways to teach higher-level mathematics to students who had not been expected to meet demanding academic standards in the past.

Swansea's teachers also aligned the language arts, mathematics and science curricula with national and state standards. Mathematics teachers made sure the mathematics curriculum matched the standards set by the National Council of Teachers of Mathematics. They also began developing end-of-course tests to establish consistency of content and standards across all mathematics courses.

- **Require All Students to Identify a Major in One of Four Broad Career Clusters**

Depending on their career goals, Swansea students complete a college-preparatory major, a tech-prep major or a dual major. Most students identify an area of concentration in grade 8 and review the decision each year. Students who choose a tech-prep major or a dual major complete four or more credits in a vocational-technical area. The tech-prep program of study is designed to develop knowledge and skills needed for further learning in the workplace and/or postsecondary studies.

Each student pursues a major in one of the following broad clusters: 1) business and information, 2) engineering industry, 3) arts and humanities, and 4) health and human services. Swansea's leaders and counselors developed a course description guide that outlines the sequence of courses required for completing a college-preparatory or a tech-prep major in each cluster.

Strengthen Guidance, Advisement and Extra Help

Swansea's leaders and teachers realized that they could not get students to see the importance of taking "the right courses" if parents did not understand. As a result, they scheduled an annual "advising night" for parents of eighth-graders. During this event, parents and their children meet with a school representative to develop a four-year program of study leading to further learning after high school. Parents receive *Career Paths*, a booklet that describes the three pathways: college preparatory, tech prep and dual. The publication also describes the four clusters, the careers reflected in each cluster, related elective courses, and the academic core that students must complete.

Similar "advising nights" have been created to help students in other grades review their plans for the coming year. Department heads present mini-lessons to help parents understand what is required of their children. More than 85 percent of parents attend these planning conferences.

Swansea High School counselors and vocational teachers have worked with middle school counselors and teachers to develop a semester-length career-exploration course for eighth-graders. Students learn about career opportunities associated with the four clusters offered in high school. The intent is to help students think about the future and the academic and vocational-technical preparation they will need to get in high school.

Ninth-graders participate in Freshman Focus, a 90-minute class that emphasizes the importance of working hard in high school, taking challenging courses, strengthening communication and study skills, and making high school an important step toward the future. English teachers help students develop writing skills, including teaching them to use the Modern Language Association's style sheet in all writing assignments. Social studies teachers offer tips on taking notes, studying, listening, and managing time. Students participate in The Real Game, an exercise on calculating the cost of raising a family and the level of income needed in a variety of career paths. A guidance counselor helps students develop personal skills such as conflict management. Students receive a grade in Freshman Focus as they would in any other class.

In Swansea's guidance program, groups of students representing every grade level are assigned to teacher-advisers who "mentor" them throughout high school. The advisers keep career folders on their students and meet with one student per day. A student's folder contains a transcript, a program of study, a list of activities in which the student has participated, the names of postsecondary institutions the student may want to attend, possible majors in college, and places that the student may want to work. Teachers designed the program to meet the need for trained staff to assist students with their programs of study. The counselor trains the teacher-advisers concerning graduation requirements, postsecondary requirements, and courses needed to complete a major.

Due to accelerated guidance services, the percentage of students who said they received help in developing a program of study increased from 60 percent in 1990 to 85 percent in 1996. The percentage of parents working with their children and a teacher-adviser to plan a program of study increased dramatically—from four percent in 1990 to 80 percent in 1996. Another guidance counselor has been added to the staff.

To get students to pursue a more challenging program of study, guidance counselors, administrators and teachers have pushed students to take more mathematics and science courses. The percentage of students doing so—particularly in the senior year—increased between 1990 and 1998. As a result, Swansea hired more mathematics and science teachers.

A representative from Midlands Tech visits the school each year to administer the ASSET exam to juniors and seniors. ASSET is a placement testing and advising program used by more than 500 community and technical colleges nationally. The test measures academic skills through timed tests in reading, writing and mathematics. Swansea's guidance counselors and teacher-advisers use the results as a "reality check" to help students and parents understand whether students are prepared for further learning in a postsecondary institution.

In closing down the general track, Swansea's leaders realized that some students would need extra help to succeed in rigorous courses. Guidance counselors use state standardized-test scores to identify eighth-graders who are not ready for ninth-grade classes. Such students are invited to participate in a summer program designed to strengthen academic skills and to connect what they will learn in high school with what it takes to succeed in the workplace. School leaders work with representatives of the Job Training Partnership Act (JTPA) program to provide extra help in reading, writing and mathematics during the summer. Students spend half their time receiving extra

help and the other half in the workplace, where they earn $3.00 per hour. Students are not permitted to work unless they receive extra help. Unprepared students who do not participate in the program are retained in the eighth grade. In the summer of 1998, all students who participated in the extra-help program were promoted to the ninth grade.

Another program assists Swansea High School students who need help with higher-level courses and have already fallen seriously behind. With parental permission, these students enter an alternative school that offers smaller classes in English, mathematics and science. When these students master specific content, they return to the high school. The alternative school focuses on academic studies and does not enroll students who have discipline problems.

Although teachers provide extra help before and after school, students who score below average on standardized tests receive computer-assisted help in reading, writing and mathematics. Most students who receive this assistance make strong gains in mathematics performance.

■ **Update the Vocational Curriculum and Equipment**

In the late 1980s, business leaders and state department of education personnel were invited to visit Swansea's vocational labs. The group's immediate recommendation was to "haul away the old, outmoded equipment." Swansea's vocational leaders used funds appropriated to schools by the state legislature to update facilities and equipment. They also eliminated home economics and industrial sewing programs and added health occupations and industrial technology. The other programs include building construction, automotive technology, and business office occupations.

Vocational teachers began emphasizing mathematics, science and communication concepts and skills that underlie their content areas. In automotive technology, students read science articles, write answers to questions about them, and make oral presentations. One student said, "I've done more writing in this class than in all my other classes combined." The instructor also assigns open-ended mathematics problems related to automotive technology. "Students who become auto mechanics need to be able to read, write, solve problems and communicate with the public," he said.

Students in health occupations courses discover that the curriculum contains a lot of science. Health Occupations I is basically a class in anatomy and physiology. To complete a health occupations program, students:

- Complete either Applied Biology I and II or college-preparatory Biology I and II, and chemistry;
- Maintain at least a "B" average in health occupations courses;
- Complete a research paper in grade 12;
- Work in a health-care field such as emergency medicine, dental assistance, pre-nursing, physical therapy, sports medicine or veterinary science.

Students learning to be nursing assistants are urged to prepare for and earn state board certification. Students wanting to become dental assistants may enroll in a course at a nearby community college while still in high school and then enter the workforce as an apprentice after graduation from high school. Even though the health occupations program is rigorous, there are always students waiting to enroll.

Guidance counselors and vocational teachers work together to provide job-shadowing experiences. Students who "shadow" employers write a paper on what they learn.

Some students complete internships that last an entire semester in grade 11 or 12. These experiences take place in businesses related to the students' majors or concentrations. Student interns follow a learning plan developed by a vocational teacher and a work-site mentor. They are evaluated by established criteria and receive a grade for accomplishments in class and at the work site.

■ **Raise Expectations in the Classroom**

District and school leaders worked together to develop curriculum guides that reflect national standards. They created guides for all courses and are developing end-of-course tests to reflect higher standards.

The 1990 *High Schools That Work* Assessment showed that Swansea High School students were deficient in reading. In fact, they scored below the *HSTW* reading goal and below the average score of all students in the *HSTW* network. Swansea's leaders and teachers pledged to improve students' reading skills. Many of the teachers attended workshops conducted by Ray Morgan, author of *Reading to Learn in the Content Areas,* and shared what they learned with all Swansea teachers. Academic and vocational teachers began to emphasize reading and writing across the curriculum.

In addition to reading and writing in the classroom, students read two books during the summer. They write a report on one of the books and either write a report or take a test on the other. The first assignment is due in July and the other when school opens in the fall. Students select books from a recommended reading list for each grade level.

The school's Certificate of Mastery is another way to encourage students to work harder. It is awarded to seniors who complete 28 or more units, maintain a grade point average of 3 on a scale of 4, and complete a senior project. The senior project consists of research, a product, and a written report that includes charts and other supporting evidence. Each student makes a presentation to a panel consisting of 1) a career-field teacher of the student's choice, 2) a business person from the career field, 3) a school administrator, 4) a curriculum specialist or a guidance counselor, and 5) an additional person of the student's choice (preferably a postsecondary representative).

For her senior project, one student researched the use of tongue depressors by pediatricians and found that many children refuse to allow doctors to examine their throats. She developed a flavored tongue-depressor, arranged for doctors to test it, and reported the findings. As a result, she is negotiating with a manufacturer to produce the depressors for sale.

■ **Improve the Quality of Instruction**

School and district leaders found that staff development is the most effective way to improve the quality of instruction. All academic teachers were encouraged to attend state workshops on applied teaching methods. The district awarded staff development credit to teachers who attended conferences and workshops and worked together on Saturdays to align curricula or to plan integrated academic and vocational assignments. If teachers were unwilling to learn and use new practices, they were encouraged to find jobs elsewhere.

Early in the improvement effort, Swansea's leaders began asking teachers to travel together to conferences and workshops on how to change what is taught, how it is taught, and what is expected of students. Each group included a couple of teachers who were "dead set" against change. By the time the group returned to school, it would be a cohesive team, ready try new ideas. "Aligning staff development with school improvement has given us a big payoff in the classroom," said Franklin Vail, superintendent of Lexington School District Four, which includes Swansea High School.

Swansea strengthened the quality of teaching by expanding the use of instructional technology in mathematics and science classes. Each student receives a graphing calculator. Computers are available in every classroom and teachers receive professional development in using them for instructional purposes. "We could not expect students to succeed in the workplace or postsecondary education without teaching them how to use technology," Vail said.

■ **Create a "Shared Vision" Among Academic and Vocational Teachers**

District and school leaders at Swansea have worked hard to develop a "shared vision" for raising achievement. They encourage academic and vocational teachers—who were once "miles apart"—to work together to improve student performance. They also participate with their teachers in staff development on how to create challenging assignments that integrate academic and vocational studies. As a result of working together, teachers consider their accomplishments as "whole-school" accomplishments and their problems as "whole-school" problems. Vocational teachers see the importance of getting students to use challenging academic content; academic teachers use high-level content in a real-world context to motivate students to work harder.

■ **Build Community Partnerships**

Swansea's school improvement council includes parent and business representatives. Each year, the school hosts a business and industry forum during which more than 300 employers meet with teachers and administrators to discuss the latest information on workplace and industry standards and the academic skills needed by new employees.

School leaders got local businesses to agree to ask for a high school transcript when a graduate applies for a job. "This sends an important message to students and parents that high school courses matter," said Larry Rabon, principal at Swansea High School. Each graduate receives a portfolio containing personal documents such as a diploma, a résumé, a final report card, a letter of recommendation, a high school transcript, and certificates or other evidence of honors the graduate earned in high school. Local employers say the portfolio "speaks much louder" than a transcript.

Districts that operate on a tight budget and serve an increasingly transient population need community support to make needed changes. To help Swansea High School communicate its improvement efforts, a representative of the local hospital established a partnership with the school to produce a monthly newsletter. The glossy, two-color publication is written by school leaders, teachers and students; printed at the hospital; and distributed by the school to parents, community representatives, school leaders and students. The newsletter provides a way to recognize high-achieving students, including those who make the principal's list and the honor roll or earn honors such as the *HSTW* Award of Educational Achievement. It also conveys important information from the school about SAT and ACT tests, other tests, and parent advisement nights.

■ **Use Applied Instructional Strategies to Motivate Students to Learn Challenging Content**

Swansea's administrators and teachers realized from the beginning of the school improvement effort that traditional instruction would not work with all students—particularly those who plan to enter the workforce immediately after graduation. Walter Tobin, the superintendent appointed under Swansea's "new regime," attended a conference where teachers described their success in using applied strategies to get students to learn challenging content. "The enthusiasm and classroom success of these teachers convinced me that our teachers needed to use applied strategies," Tobin said. To follow up, he sent Swansea mathematics and science teachers to summer institutes sponsored by the state department of education. Today, all new teachers at Swansea receive training in applied learning. The school offers a number of applied courses in English, mathematics and science. Students who take English Communications for the Workplace read the same literature as students in the other English classes but have different writing assignments.

A new school schedule has made it easier for teachers to work together to plan ways to make learning more meaningful. The schedule consists of four 90-minute periods per day. These longer blocks of time enable students to complete more projects and assignments in which they apply academic content to solve problems from the workplace or the community.

The business community supports Swansea's efforts to get students to apply academic concepts in doing authentic, work-related assignments. Mathematics teachers asked business leaders to provide examples of how mathematics is used in their businesses. "The response from employers was tremendous," said Joy Hoffman, head of the school's mathematics department.

Hoffman uses project learning in her classes, including making joint assignments with other teachers. To get students to use the laws of algebra and geometry, she asked them to design a retirement community consisting of two residential care facilities, two apartment buildings, a dining hall, and walking trails. Just as an architect creates designs for a builder to follow, geometry students in this project developed scale drawings for students in building-construction class to follow. Trigonometry students analyzed and evaluated the plans and explained any problems orally to the rest of the class. "When students see how geometry and trigonometry are used in real life, more of them decide to take trigonometry," Hoffman said.

Results in Improving Student Achievement

Student achievement at Swansea has increased steadily since the school began using the *High Schools That Work* key practices as an improvement framework.

■ Overall Performance Has Improved

Swansea's incremental approach has brought consistent improvement in students' reading, mathematics and science performance. Students scored significantly higher on the *HSTW* Assessment of reading, mathematics and science in 1996 than in 1993. (See Table 1.)

Table 1

Comparison of Swansea High School's Average Scores and Average Scores of Other Groups of Students in 1993 and 1996

	Swansea High School		All Sites	National	National	*HSTW*
	1993	1996	1996	Vocational	Academic	Goal
Reading	274	284	273	267	302	279
Mathematics	290	301	285	277	317	295
Science	281	293	283	267	307	292

Note: Scores are based on a scale of 0 to 500.

Larger percentages of Swansea students met or exceeded the *HSTW* goals in reading, mathematics and science in 1996 than in 1993. In reading, the percentage of students who met the performance goal increased from 45 percent in 1993 to 60 percent in 1996. School leaders want every student to meet the *HSTW* reading goal.

The percentage of Swansea students who met the *HSTW* mathematics goal increased from 40 percent in 1993 to 60 percent in 1996. This compares to an increase for all students in the *HSTW* network from 36 percent in 1993/94 to 44 percent in 1996.

Swansea students made dramatic gains in science. The percentage of students who met the *HSTW* science goal more than doubled—from 25 percent in 1993 to 56 percent in 1996. In the *HSTW* network, 35 percent met the science goal in 1993/94, while 38 percent met it in 1996.

Career-bound students[1] are not the only ones who have gained at Swansea. Between 1992 and 1997, the average SAT verbal score increased 31 points, compared to an eight-point increase statewide in South Carolina. The average SAT mathematics score increased 15 points, compared to a seven-point increase in the state. During this time, the percentage of Swansea students taking the SAT rose from 42 percent to 52 percent. Swansea was able to increase its average scores while getting more students to take the SAT.

■ **Taking the Right Courses Has Made a Difference**

Eighty-four percent of Swansea students who participated in the 1990 *HSTW* Assessment had completed General Mathematics, while only 44 percent had completed Algebra I. By 1996, the percentage of students enrolled in General Mathematics had decreased substantially to only six percent. Eighty-five percent had taken Algebra I. A similar pattern emerged in science. In 1990, only eight percent had completed chemistry, and only four percent had completed lab physics. By 1996, 77 percent had completed chemistry and 31 percent had completed lab physics. In fact, a much higher percentage of students at Swansea—than at high-scoring *HSTW* sites with students demographically similar to those at Swansea—completed the *HSTW*-recommended curriculum in English and science. (See Table 2.)

Table 2

Comparison of the Percentage of Students Completing the *HSTW*-Recommended Curriculum at Swansea High School and at High-Scoring Sites Demographically Similar to Swansea

	Swansea High School		High-Scoring Sites with Similar Students	
Completed the *HSTW*-Recommended Curriculum in:	%	Average Score	%	Average Score
English	85	287 in reading	53	293 in reading
Mathematics	85	304 in mathematics	84	308 in mathematics
Science	88	295 in science	62	295 in science

Notes: Scores are based on a scale of 0 to 500.

[1] These students are the 60 to 65 percent of high school youths who plan to work, attend a two-year technical or community college, enroll in a four-year college or university with an open admissions policy, or enter the military after high school graduation.

■ **Swansea Students Are Meeting Higher Expectations**

Clearly, Swansea students met higher expectations between 1993 and 1996. Students received more encouragement from their teachers, took more mathematics and science courses, and generally worked harder in and out of class. (See Table 3.) The percentage of students who reported having no homework for their vocational classes declined from 55 percent in 1993 to 38 percent in 1996.

Table 3

Comparison of Students' Expectations at Swansea High School Between 1993 and 1996

Students said:	% in 1993	% in 1996
Their courses were challenging;	30	75
They took a mathematics course as a senior;	60	75
They completed four or more mathematics courses;	35	63
They completed four or more science courses;	15	38
They were encouraged to take more mathematics and science courses;	70	83
Their teachers expected them to do well;	85	96
They did one or more hours of homework daily;	30	56
They read more than two assigned books outside of class each year;	63	98
They made more than two oral presentations in class per year;	79	94
They wrote more than two major research papers per year;	32	42
They used mathematics to solve problems in a vocational class more than twice a year.	47	69

■ **Vocational Students Have a "New View" of the Future**

In 1993, only 21 percent of students completing a vocational concentration at Swansea High School considered undertaking further study. Three years later, 68 percent of such students said they planned to continue their studies after high school. The percentage of Swansea's vocational graduates who entered a postsecondary institution grew from 36 percent in 1991 to more than 75 percent in 1997.

When students see high school as a place to prepare for a future goal, they make better choices. The dropout rate at Swansea High School declined from eight percent in 1991 to two percent in 1997. The teen pregnancy rate decreased from 14 percent to two percent during the same period.

The School's Plans for the Future

School leaders plan to continue their efforts to improve school and classroom practices by:

- Using end-of-course tests in mathematics, beginning in the 1998-99 school year;
- Sponsoring a business and education forum in 1998-99 to help students and teachers understand workplace requirements.

High Schools That Work and the State Have Contributed to School Improvement

Swansea's school and district leaders have identified *High Schools That Work* as the major force in improving the high school. "*High Schools That Work* has given us clear goals—something to aim for," Superintendent Vail said. "It has provided an effective framework for organizing changes in school and classroom practices." Teachers and leaders who attend *HSTW* workshops and conferences share what they learn with the rest of the staff. "We have received many good examples of what works and have learned the names of contacts at other schools," one teacher said. "I like finding out what high-achieving schools are doing, because I want to give my best and get my students to do the same."

South Carolina's new school-accountability legislation calls for parents to attend in-school planning conferences when their children are in grades three through eight. This sends the message to parents that they have an important role to play in planning their children's programs of study. The state has also increased graduation requirements and added end-of-course tests. "These new requirements make a lot of sense," Superintendent Vail said. "They give us an excuse to do things we think are needed and to help parents see the importance of high school for their sons and daughters."

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